

Final Report for Period: 03/2010 - 02/2011**Submitted on:** 06/22/2011**Principal Investigator:** Belegadek, Igor .**Award ID:** 0737851**Organization:** Georgia Tech Research Corp**Submitted By:**

Belegadek, Igor - Principal Investigator

Title:

Geometric Group Theory on the Gulf Coast

Project Participants**Senior Personnel****Name:** Belegadek, Igor**Worked for more than 160 Hours:** Yes**Contribution to Project:****Name:** Mineyev, Igor**Worked for more than 160 Hours:** Yes**Contribution to Project:****Name:** Barnard, Joshua**Worked for more than 160 Hours:** Yes**Contribution to Project:****Post-doc****Graduate Student****Undergraduate Student****Technician, Programmer****Other Participant****Research Experience for Undergraduates****Organizational Partners****Other Collaborators or Contacts****Activities and Findings****Research and Education Activities: (See PDF version submitted by PI at the end of the report)**

This is the final report for the Geometric Group Theory on the Gulf Coast Conference (abbreviated G³) held in the springs of 2008, 2009, 2010. The conference focused on interactions of geometric group theory with other parts of mathematics, and is organized by Igor Belegadek (Georgia Tech), Josh Barnard (South Alabama), and Igor Mineyev (Urbana Champaign).

The attached file provides statistics for each year's meeting and includes the expense statement for the 2010 meeting. It details how speakers were chosen and methods of dissemination and advertising the conference. Then given are complete programs for each year's meeting.

Findings:

Training and Development:

Outreach Activities:

Journal Publications

Books or Other One-time Publications

Web/Internet Site

URL(s):

www.math.uiuc.edu/~mineyev/ggg

Description:

Schedules and photos from all the G³ conferences are maintained on this website

Other Specific Products

Contributions

Contributions within Discipline:

Contributions to Other Disciplines:

Contributions to Human Resource Development:

Contributions to Resources for Research and Education:

Contributions Beyond Science and Engineering:

Conference Proceedings

Categories for which nothing is reported:

Organizational Partners

Activities and Findings: Any Findings

Activities and Findings: Any Training and Development

Activities and Findings: Any Outreach Activities

Any Journal

Any Book

Any Product

Contributions: To Any within Discipline

Contributions: To Any Other Disciplines

Contributions: To Any Human Resource Development

Contributions: To Any Resources for Research and Education

Contributions: To Any Beyond Science and Engineering

Any Conference

GEOMETRIC GROUP THEORY ON THE GULF COAST FINAL REPORT ON DMS-0737851, 2008-2010

This is the final report for the Geometric Group Theory on the Gulf Coast Conference (abbreviated G^3) held in the springs of 2008, 2009, 2010. The conference focused on interactions of geometric group theory with other parts of mathematics, and is organized by Igor Belegradek (Georgia Tech), Josh Barnard (South Alabama), and Igor Mineyev (Urbana Champaign).

1. INTELLECTUAL MERIT

Last decade have seen intense interactions and cross-fertilization of geometric group theory with other parts of mathematics such as

- asymptotic and coarse geometry
- L^2 -cohomology and Novikov type conjectures
- analysis and dynamics on group boundaries
- discrete groups and nonpositively curved spaces.

These are separate fields yet they increasingly borrow techniques, examples, and insights from each other, and their richness and interplay feeds back to the geometric group theory, and provides strong motivation for its development.

The intellectual goal of the conference is to assemble researchers from these neighboring fields, so they can share ideas and expertise while interacting with students and junior mathematicians. By design G^3 does not focus on one subfield.

2. HISTORY AND BROAD IMPACT

G^3 has been held annually since 1998 at various places on the Gulf Coast, and is now an established and popular international meeting.

Aided by the conference small size (25–30 participants) and its waterfront locations, G^3 has become well-known for a unique friendly atmosphere that fosters interactions of established and junior mathematicians, help jump start careers and collaborations, and build the sense of community in geometric group theory.

The last three G^3 's were funded from DMS-0737851 grant that covered equipment and hotel costs, travel expenses for the speakers and other participants in need (many of whom were recent PhDs or graduate students). The grant funds were stretched to support nearly every participant, many of whom otherwise would not be able to come.

During the grant period, G^3 speakers have come from 30 different institutions, from local schools such as Georgia Southern and Louisiana State to established research centers in US and Europe. The Gulf Coast does not see that many mathematical conferences, so by bringing to the area a geographically diverse group of experts, G^3 has had a considerable impact on student training and faculty development.

Among the speakers of last three G^3 's, 25% were students and 38% were junior mathematicians (that is, postdocs or Assistant Professors); 19% of the speakers were female, and 8% were female students.

Students talks at G^3 are nearly always of high quality, and G^3 is fairly unique in giving students a chance to give a 50-minute-lecture to established mathematicians.

Past G^3 schedules and photos are available at

<http://www.math.uiuc.edu/~mineyev/ggg/>.

3. HOW THE SPEAKERS ARE CHOSEN

G^3 is held in the Spring, and in the early Fall of the previous year the organizers typically invite some senior speakers. The second round on invitations occurs in the late Fall when the organizers focus on more junior people such as students who have done significant works towards their PhD. Finally, about half of the speakers are chosen closer to the meeting time, on competitive basis with consideration of mathematical quality of their work and diversity.

The organizers work hard to attract students and mathematicians from underrepresented groups, people with disabilities, people of various backgrounds, geographic origin, citizenship, and ethnicity.

Most recently, the organizers had great success in getting female speakers, e.g. 28% of talks in 2010 G^3 were given by female mathematicians.

To keep G^3 diverse we try to wait several years before repeating a speaker.

4. DISSEMINATION AND ADVERTISEMENT

Dissemination of conference results is planned through the following venues:

- A website is maintained with talks abstracts and photographs from the conference, just as in the past, so that mathematical community will get instant access to announced results, thereby increasing their impact.
- A “preprint desk” where a participant can leave a preprint for anyone to browse.
- A “poster session”, which is an additional special time reserved for participants to discuss the articles with others. This allows those not giving a talk to present their work, thereby broadening participation.

The conference will be advertised by emailing previous participants, and via the Geometry List. In addition, a website is maintained at

<http://www.math.uiuc.edu/~mineyev/ggg/>

with talks schedule and other conference info.

Details on the 11th G^3 Conference

The 11th Geometric Group Theory on the Gulf Coast Conference was held in Pensacola, FL on March 20–23rd of 2008.

There were 17 fifty-minute-talks including 6 talks by finishing graduate students. Three of the speakers were female: Delaram Kahrobaei, Ivonne Ortiz, and Yvonne Lai.

Speaker’s selection process: about half of the speakers are invited, and the other slots were distributed on competitive basis, but at the end there were only two applicants who did not get a talk.

The grant funds were used to provide full support for 15 speakers, 3 students, and partial support to other participants in need, and to organizers. The grant also covered the hotel bill for nearly every participant, as well as equipment rent cost (whiteboards and projectors).

Speakers of the 11th G^3 Conference*Thursday, March 20*

- Peter Storm (UPenn), Assistant Professor
- Danny Calegari (Caltech), Professor
- Jaejeong Lee (UC Davis), Student
- Yvonne Lai (UC Davis), Student
- Jason Manning, (SUNY Buffalo), Assistant Professor

Friday, March 21

- Chris Leininger (Urbana-Champaign), Assistant Professor
- Sergio Fenley (Florida State), Professor
- Peter Storm (UPenn), Assistant Professor
- Danny Calegari (Caltech), Professor
- Dongping Zhuang (Caltech), Student
- discussion, presentation of articles, poster session

Saturday, March 22

- Delaram Kahrobaei (CUNY), Assistant Professor
- John Mackay, (Ann Arbor), Student
- Isaac Goldbring (Urbana-Champaign), Student
- Ivonne Ortiz (Miami University, Oxford Ohio), Assistant Professor
- Frank Quinn (Virginia Tech), Professor

Sunday, March 23

- Chris Hruska (Wisconsin-Milwaukee), Assistant Professor
- Ren Guo (Rutgers), Student

Student participants who did not give a talk: Giang Do (Georgia Tech), Amey Kaloti (Georgia Tech), Joel Louwsma (CalTech), Anh Tran (Georgia Tech).

Other participants who did not give a talk: Alberto Delgado (Bradley University), Kelly Delp (Buffalo State College), Dan Farley (Miami University in Oxford, Ohio), Swiat R. Gal (Ohio State), Jeffrey Gong (United Arab Emirates University), Jean Lafont (Ohio State), Natasha Macura (Trinity University), Atish Mitra (University of South Florida), James West (Cornell).

Details on the 12th G^3 Conference

The 12th Geometric Group Theory on the Gulf Coast Conference was held in South Padre Island, TX on April 2-5 of 2009.

There were 18 fifty-minute-talks including 3 talks by graduate students: Khalid Bou-Rabee, Jing Tao, and Enrico Le Donne.

Two of the speakers were female: Jing Tao and Ursula Hamenstaedt.

Speaker's selection process: two thirds of the speakers were invited, and the other slots were distributed on competitive basis.

The grant funds were used to provide full support for 16 speakers, 4 students, and partial support to other participants in need, and to organizers. The grant also covered the hotel bill for every participant, as well as equipment rent cost (whiteboards and projectors).

Speakers of the 12th G^3 Conference

Thursday, March 20

- Ben McReynolds (U Chicago), Dickson Instructor
- Pablo Suarez-Serrato (CIMAT), Research Associate
- Julien Paupert (U Utah), Postdoc
- Christopher Connell (Indiana), Associate Professor
- Khalid Bou-Rabee (U Chicago), Student

Friday, March 21

- Robert McCann (U Toronto), Professor
- Jing Tao (U Chicago), Student
- Eduardo Martinez Pedroza (McMaster), Postdoc
- Kevin Pilgrim (Indiana U), Associate Professor
- Daniel Allcock (UT Austin), Associate Professor
- discussion, presentation of articles, poster session

Saturday, March 22

- Daniel Groves (UI Chicago), Assistant Professor
- Enrico Le Donne (Yale), Student
- Robert McCann (U Toronto), Professor
- Dan Margalit (Tuffs), Assistant Professor
- Daniel Allcock (UT Austin), Associate Professor

Sunday, March 23

- Ursula Hamenstaedt (U Bonn), Professor
- Andreas Thom (U Goettingen), Postdoc
- Atish Mitra (U of S Florida)

Student participants who did not give a talk: Gabriel Amos (UC Davis), Ian Biringer (U Chicago), James Forehand (UC Davis), Erika Meucci (University of Utah).

Other participants who did not give a talk: John Donnelly (U Southern Indiana) Jeffrey Gong (United Arab Emirates U), Daniela Nikolova-Popova (Florida Atlantic U), James West (Cornell), Claire Wladis (BMCC/CUNY).

Details on the 13th G^3 Conference

The 13th Geometric Group Theory on the Gulf Coast Conference was held in Pensacola Beach, FL on March 25-28, 2010.

The conferences theme was interactions of geometric group theory with other parts of mathematics, and it brought together experts, recent PhDs, and graduate students.

There were 18 fty-minute-talks given by 15 speakers, including 4 talks by graduate students: Leah Childers, Tara Davis, Mark Hagen, and Joel Louwsma. Five of the speakers were female: Leah Childers, Pallavi Dani, Tara Davis, Natasa Macura, Alexandra Pettet.

Speakers selection process: 8 of the speakers were invited, and the other 7 slots were distributed on competitive basis.

There was also a popular Introductory Mathematical Origami Class taught by Igor Mineyevs sons and wife, Yukimi Oishi.

The grant funds were used to provide full support to 15 speakers, to 4 students who did not give a talk, and to organizers. Partial support was given to 3 other participants in need. The grant also covered the hotel bill for participants, as well as equipment rent cost (whiteboards and projectors).

Speakers of the 13th G^3 Conference

Thursday, March 25

- Denis Osin (Vanderbilt), Associate Professor
- Tara Davis (Vanderbilt), Student
- Joel Louwsma (Caltech), Student
- Robert Young (IHES), Visitor
- Juan Souto (U Michigan), Professor

Friday, March 26

- Mark Sapir (Vanderbilt), Professor
- Pallavi Dani (Louisiana State), Assistant Professor
- Xiangdong Xie (Georgia Southern), Assistant Professor
- Denis Osin (Vanderbilt), Associate Professor
- Bobby Ramsey (Indiana), Postdoc
- discussion, presentation of articles, poster session
- Igor Mineyevs informal talk on Hanna Neumann Conjecture

Saturday, March 27

- Stefan Wenger (UI Chicago), Assistant Professor
- Alexandra Pettet (U Michigan), Assistant Professor
- Robert Young (IHES), Visitor
- Natasa Macura (Trinity), Associate Professor
- Tim Riley (Cornell), Associate Professor

Sunday, March 28

- Mark Sapir (Vanderbilt), Professor
- Mark Hagen (McGill), Student
- Leah Childers (Louisiana State), Student

Student participants who did not give a talk: Student participants who did not give a talk: Gabriel Amos (UC Davis), James Forehand (UC Davis), Dustin Mayeda (UC Davis), Nina White, (U Michigan).

Other participants who did not give a talk: John Donnelly (U Southern Indiana) Mile Krajcevski (U South Florida), Atish Mitra (Ben Gurion), James West (Cornell), Susan Williams (U South Alabama).

Expense Statement **Geometric Group Theory on the Gulf Coast**

(2) A list of persons for whom travel funds were provided; (3) institutional address; (4) sum awarded. (S = Student, AP = Assistant Professor, AsP = Associate Professor, PD = Post Doc and O = Organizer)

Participants⁽²⁾	Institutional Address⁽³⁾	Sum Awarded⁽⁴⁾
Amos, Gabriel (S)	University California, Davis	599.30
Barnard, Josh (AP)	University of South Alabama	316.40
Belegadek, Igor (O)	Georgia Tech	631.40
Childers, Leah (S)	Louisiana State University	449.00
Dani, Pallavi (AP)	Louisiana State University	184.00
Davis, Tara (S)	Vanderbilt University	961.80
Donnelly, John (AP)	University Southern Indiana	804.00
Forehand, James (S)	University California, Davis	529.50
Hagen, Mark (S)	McGill University	669.80
Louwsma, Joel (S)	California Institute of Technology	861.05
Macura, Natasa (AsP)	Trinity University	584.80
Mayeda, Dustin (S)	University California, Davis	542.50
McReynolds, David Ben (PD)	University Chicago	781.80
Mineyev, Igor (O)	University Illinois, Urbana-Champaign	781.87
Mitra, Atish (AP)	University South Florida	697.00
Osin, Denis (AsP)	Vanderbilt University	599.00
Pettet, Alexander (AP)	University of Michigan	609.55
Ramsey, Bobby	Indiana University- Purdue University Indianapolis	997.77
Riley, Timothy (AP)	Cornell University	625.00
Sapir, Mark (P)	Vanderbilt University	1,426.48
Souto, Juan (AP)	University of Michigan	699.80
Wenger, Stefan (AP)	University of Illinois at Chicago	572.80
White, Nina (S)	University Michigan	554.80
Xie, Xiangdong (AP)	Georgia Southern University	635.55
Young, Robert	Institut des Hautes Etudes Scientifiques	606.65
Total Travel		16,691.62
Days Inn Pensacola Beachfront		9,440.00
Beachcomber by the Sea, 2011 hotel deposit		2,429.96
Total Expenses 2010		28,561.58
Total Expenses 2009		27,295.52
Total Expenses 2008		20,192.90
Total Grant Expenses		76,050.00
Grant Total		76,050.00